

REMARKS

The Office Action of July 14, 2004 has been carefully considered.

Regarding the objection to the drawings under 37 CFR 1.83(a), in a packet transmission module, a packet switch performs multiplexing and demultiplexing functions (i.e., combining the packets of services data onto various optical fibers; see page 11, lines 12-23, and page 13, lines 25-29). Accordingly, claim 2 has been amended to specifically recite the packet switch, and to remove the non-illustrated multiplexer/demultiplexer unit. On the other hand, a multiplexer and a demultiplexer are illustrated in a service aggregation module of the aggregator shown in Fig. 3 by reference numerals 42 and 44, and in Fig. 5 by reference numerals 118, 120 and 122. In order to clarify claim 3, the claim has been amended to recite a separate multiplexer and demultiplexer.

The allowability of claims 4-19 has been noted. Claims 4 and 18 have been placed in independent form and are deemed to be allowable, as well as claims 10-13 and 19 which depend directly or ultimately from an allowed claim.

Claims 1-3 have been rejected under 35 USC 103(a) over Mo et al.

The present invention relates to a system for data transmission and data receipt over an optical network. The system includes a number of novel elements, including at least one service collection unit including a collection module for collecting a plurality of services data to be transmitted; a processing module for processing the services data in their original protocols into packets; and a packet transmission module for converting the packets into optical signals on an optical fiber for transmission into a metro network. The

system also includes an aggregator, coupled for upstream and downstream optical communication to a plurality of such service collection units. The aggregator includes a sorting module for sorting the services data from a plurality of packets received from the metro network, according to service type; and a service aggregation module for combining like services data for transmission over an appropriate service network.

The Office Action states that Mo et al discloses a service collection unit (receiver 120, demultiplexer 122 and transmitter 126) and an aggregator (traffic buffer 150, local buffer 152 and multiplexer 124).

Mo et al describes a device and method for separating data of a *single service* into different traffic types, namely, high priority or low priority. There is no teaching or suggestion or possibility of using different services, only IP (Ethernet) packets.

Thus, contrary to the statement in the Office Action, the receiver of Mo et al does not collect a plurality of services data, but rather receives traffic which is made up of many pre-formed packets of data of a single service, and sorts the traffic based on a two-level scheme, separating high priority pass-through traffic from low priority pass-through traffic. As stated at col. 2, lines 55-61, Mo et al describes a technical advantage of the invention as *providing class of service support for Internet protocol (IP) traffic*. Traffic is distinguished and routed based on its class of service parameters, which allows high-priority traffic to be processed with minimal delay, and low-priority traffic to be delayed or dropped. Again, in the Detailed Description at col. 3, lines 54-61, it is stated "the transport network... is an Internet protocol (IP) network for transportation IP and Multiple

Protocol Label Switch (MPLS) packets", or "any other packet-switched network operable to route...data packets based on network protocol addresses."

In fact, the invention uses services data to build traffic. The system of the invention puts together the services into packets which form traffic, which can then be routed according to the method of Mo et al. In other words, the present invention is utilized at a level below or before the level of treatment of Mo et al.

The Office Action further contends that Mo et al includes a processing module (the demultiplexer) for processing the services data in their original protocols into packets, pointing to col. 8, line 32. Mo et al does disclose receiving ready-made packets but does not disclose processing any services data into packets. The reference merely discloses routing existing packets according to a priority scheme. Col. 8, lines 32-35 describes a transmit buffer which is suitably sized to hold two or more packets, operable to hold direct pass-through packets while the multiplexer processes a current packet, namely multiplexing the packets onto an optical fiber. As stated above, there is no teaching or suggestion or need or possibility in Mo et al for processing services data so as to form packets, as is done in the processing module of the invention. In fact, there is no connection between the processing module 122 of the invention and the demultiplexer of Mo et al, except for the word "packet."

It is also alleged that Mo et al includes an aggregator module (traffic buffer 150, local buffer 152, and multiplexer 124) for sorting the services data from a plurality of packets according to service type. "Services" according to the invention refers to data transferred according to various protocols, such as IP, TDM, ATM, etc., each of which is

transported, at present, over a different network. The invention provides a system which enables transport of different services together, regardless of their original protocol, by packaging these services in their original protocols into novel packets, which are received in an aggregator after transmission. The aggregator opens the packets and sorts the services according to their original protocols and then re-combines them in a aggregator module for sending like services over their own conventional networks.

It is submitted that the traffic buffer 150, local buffer 152, and multiplexer 124 of Mo et al form a router or switch, rather than an aggregator module according to the invention. As explained at col. 4, lines 8-10, col. 6, lines 19-21, and col. 8, lines 18-67, the Mo et al network includes a plurality of Internet protocol transport (IPT) nodes, each IPT node including one or more receiver-transceiver pairs (RTP) and a processing system interconnected by an internal Ethernet connection. The RTP includes a demultiplexer coupled to a receiver, and a multiplexer coupled to a transmitter, with the traffic buffer and local buffer between the demultiplexer and multiplexer. The demultiplexer includes a lookup table 162 for identifying pass-through and local traffic. The pass-through traffic goes via the traffic buffer to the transmitter, while the local traffic is sent to the transmitter if there is available bandwidth. This system is not constructed, nor does it operate, as does the aggregator of the invention, which includes at least one module for sorting services data in its original protocols from a plurality of packets formed in at least one service collection unit by collecting and processing a plurality of services data, only one type of which may be IP protocol services.

The Office Action states that Mo et al fails to explicitly show a metro network, but even assuming the obviousness of a metro network, the invention is not rendered obvious by Mo et al for the reasons discussed above.

With regard to claim 2 and 3, it is alleged that Stephens shows a multiplexer/demultiplexer. Stephens discloses a conventional prior art communication system for broadcasting to mobile users which contains no services collection unit and no aggregator of the type presently claimed, and which is not disclosed or suggested by Mo et al.

Withdrawal of this rejection is requested.

Claim 1 only has been rejected under the doctrine of obviousness-type double patenting over claim 1 of co-pending application serial no. 09/753,399. Should claim 1 be found to be allowable in both applications, a terminal disclaimer will be filed to remove this rejection.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



Fra J. Schultz

Registration No. 28666